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## *Errata in Right Ascensions of Sirius and Procyon as given in Tables III. and IV.* "*Monthly Notices*," lvi. 1, pp. 22–25.

| Year. | Sirius. | | Procyon. | |
|---|---|---|---|---|
| | Mean Right Ascension. | Adopted Secs. of R.A. 1890·0. | Mean Right Ascension. | Adopted Secs. of R.A. 1890·0. |
| | s | s | s | s |
| 1836 | 55·370 | 18·090 | 42·800 | 32·560 |
| 1837 | 58·060 | ·140 | 45·980 | ·600 |
| 1838 | 0·690 | ·120 | 49·090 | ·550 |
| 1839 | 3·390 | ·180 | 52·250 | ·570 |
| 1840 | 6·040 | ·160 | 55·380 | ·530 |
| 1841 | 8·660 | ·130 | 58·530 | ·530 |
| 1842 | 11·390 | ·200 | 1·750 | ·610 |
| 1843 | 14·000 | ·250 | 4·830 | ·630 |
| 1844 | 16·580 | ·170 | 8·000 | ·640 |
| 1845 | 19·210 | ·180 | 11·160 | ·680 |
| 1846 | 21·840 | ·120 | 14·280 | ·610 |
| 1847 | 24·430 | ·080 | 17·440 | ·640 |
| 1854 | 42·790 | 17·980 | 39·490 | ·690 |
| 1855 | 45·480 | 18·020 | 42·640 | ·700 |
| 1856 | 48·120 | ·000 | 45·790 | ·700 |
| 1857 | 50·700 | 17·940 | 48·910 | ·670 |
| 1858 | 53·280 | ·880 | 52·020 | ·640 |
| 1859 | 55·980 | ·940 | 55·160 | ·630 |
| 1860 | 58·600 | ·910 | 58·370 | ·650 |

The effect of these corrections is to make the agreement between Dr. Auwers' orbital corrections and the observations closer than before.

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## *Variation of T Centauri* (Ch. 4896). By A. W. Roberts.

In the *Monthly Notices* for November 1895 Colonel Markwick contributes a paper upon the variation of *T Centauri.*

This star was frequently observed at Lovedale during 1895, and as the elements of variation determined from these observations do not quite agree with those obtained by Colonel Markwick it is of present interest to deal with the Lovedale observations.

In determining the magnitude of *T Centauri* the following comparison stars were employed:—

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| C. Z. C. | R.A. (1875). h | m | s | Dec. ° | ′ | Mag. |
|---|---|---|---|---|---|---|
| 2115 | 13 | 35 | 10 | 33 | 20·9 | 6·60 |
| 1910 | | 31 | 43 | 32 | 28·5 | 6·70 |
| 2033 | | 33 | 51 | 33 | 49·4 | 7·00 |
| 2003 | | 33 | 21 | 33 | 43·4 | 7·30 |
| 1630 | | 27 | 8 | 33 | 44·7 | 7·60 |
| 1711 | | 28 | 22 | 33 | 22·6 | 7·75 |
| 1624 | | 27 | 4 | 33 | 25·6 | 7·80 |
| 2386 | | 39 | 17 | 33 | 8·8 | 7·93 |
| 2152 | | 35 | 42 | 32 | 2·2 | 8·13 |
| 1746 | | 28 | 58 | 33 | 44·0 | 8·50 |
| 1838 | | 30 | 31 | 33 | 40·0 | 8·60 |
| 2299 | | 38 | 6 | 32 | 38·7 | 8·60 |
| 2082 | | 34 | 36 | 33 | 7·9 | 8·85 |
| 2362 | | 38 | 52 | 32 | 50·4 | 8·90 |
| 2212 | | 36 | 37 | 32 | 32·1 | 9·00 |
| 2240 | | 37 | 7 | 32 | 34·1 | 9·00 |
| 2039 | 13 | 34 | 0 | 33 | 1·3 | 9·10 |

For magnitudes brighter than 6·5 the comparison stars used in observing l, R and S *Carinæ* were employed.

The magnitudes of the foregoing stars are determined from two reference points, viz. 6·8 and 9·3. The former magnitude is that of a star just visible to the naked eye; the latter is the lowest magnitude visible in a 1-inch glass.

The detailed observations are as follows :—

| 1895. | | m | 1895 | | m | 1895 | | m |
|---|---|---|---|---|---|---|---|---|
| Mar. | 21·4 | 6·20 | April | 27·3 | 8·85 | June | 22·5 | 6·00 |
| | 22·4 | 6·20 | | 29 3 | 8·90 | | 25·5 | 6·40 |
| | 27·4 | 6·30 | May | 14·3 | 7·15 | July | 16·4 | 8·15 |
| | 29·5 | 6·40 | | 15·4 | 7·10 | | 25·3 | 9·05 |
| April | 3·3 | 6·80 | | 18·3 | 7·00 | Aug. | 9·3 | 8·10 |
| | 12·3 | 7·65 | | 20·3 | 6·65 | | 12·4 | 8·00 |
| | 15·3 | 8·00 | | 27·5 | 6·60 | | 14·4 | 7·53 |
| | 21·3 | 8·20 | | 31·6 | 6·20 | | 15·3 | 7·40 |
| | 22·4 | 8·45 | June | 14·5 | 6·00 | | 16·3 | 7·30 |
| | 24·4 | 8·75 | | 15·5 | 6·20 | | 21·3 | 7·00 |
| | 26·3 | 8·95 | | 18·4 | 6·20 | | 24·3 | 7·00 |
| | | | | 20·4 | 5·90 | | 27·4 | 6·75 |

Each observation is the mean of two others: one taken with the direct vision eye-piece, the other with the reversing eye-piece.

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In this way the error arising from the position of the variable with relation to the surrounding comparison stars was eliminated.

Charting down the several observations we obtain the light curve given in the diagram, an examination of which yields the following elements :—

| | |
|---|---|
| Period ... ... ... ... ... ... | 91·2 days. |
| Min. to Max. ... ... ... ... ... | 42 days. |
| Max. to Min. ... ... ... ... ... | 49 days. |
| Epoch of Max. . . ... ... ... ... | 1895 June 9. |
| Max. limit ... ... ... ... ... | 5·85 Mag. |
| Min. limit ... ... ... ... ... | 9·15 Mag. |

The main points of difference between these elements and those determined by Colonel Markwick are the period and the magnitude at minimum phase.

Both Colonel Markwick's observations and my own indicate a minimum on or about April 25.

On April 25 and 26 Colonel Markwick estimated *T Centauri* to be of the 10th mag. On April 24 and 26 I found in the 1-inch glass, the limit of vision of which is 9·3 mag., that it was 8·75 and 8·95 respectively.

As regards the period, I think it will be found that a period of 91 days satisfies the data collected by Colonel Markwick in his interesting paper. Especially is this the case with the interval of 638 days between the minimum observed at Arequipa on 1893 July 27 and that observed by Colonel Markwick on 1895 April 26. Taking *seven* periods (instead of nine) to have elapsed between the two dates we obtain a mean period of 91·1 days.

The magnitudes given in meridian catalogues are very insecure data to base a determination of light period upon. As often as not the observer copies down the magnitude from his observing list, and even if an estimate of magnitude were made as the star crossed the field it would be but at best a rude guess. It is needless, therefore, to enter into an inquiry as to the agreement between the elements just given and the magnitudes in meridian catalogues.

But of more importance than this comparison between ephemerides computed from elements of variation and magnitudes in star catalogues is the method of determining the principal elements of variation—viz. the period. The usual method employed is to compare isolated measures made at or near one maximum with those made at another maximum.

It is evident that errors in estimating the magnitudes made use of in the computation will influence the result to no small extent. Further, the maximum phase of most long-period

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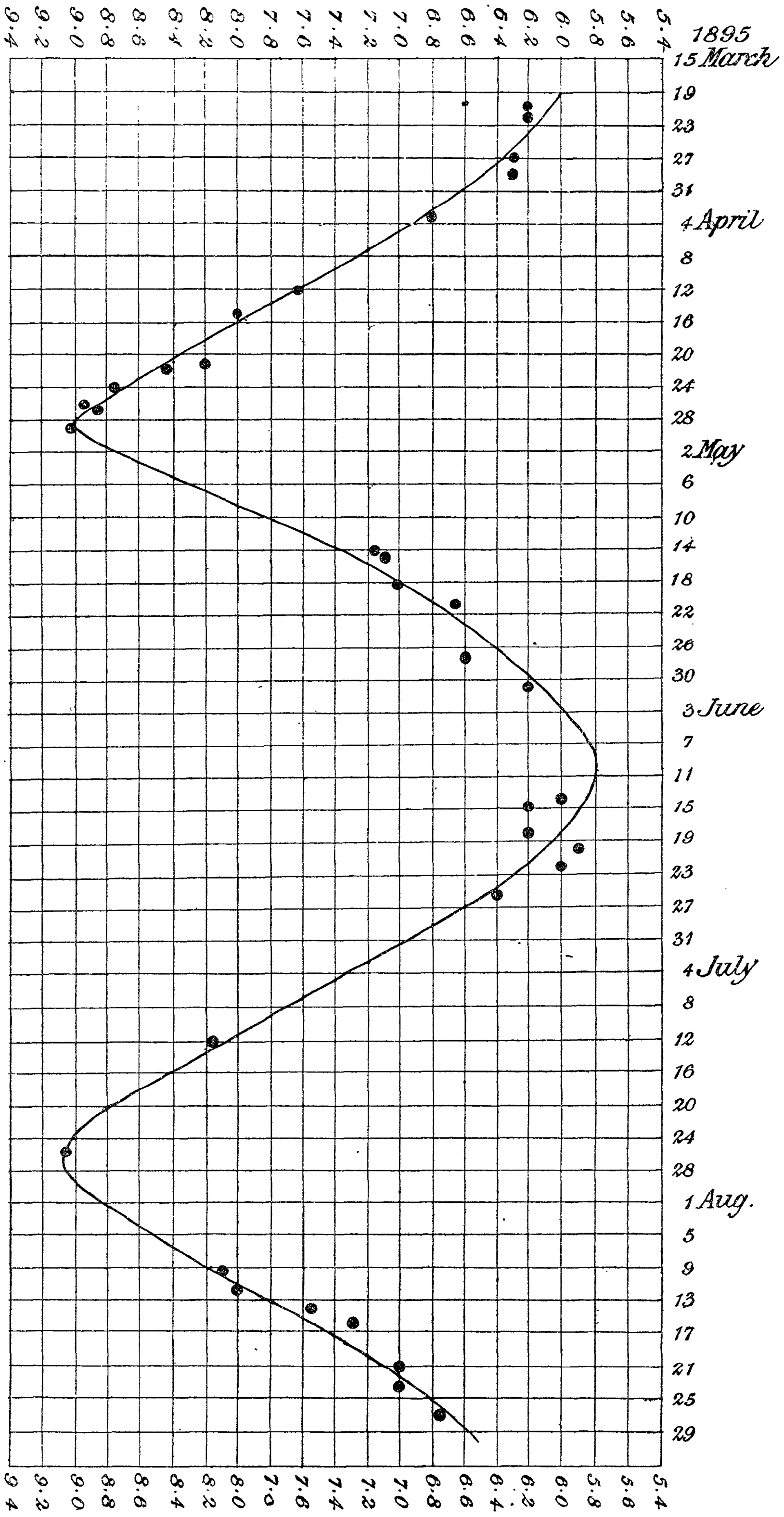

Light Curve of *T Centauri.*

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variables is not distinctly marked, and thus the determination of a point of reference depends a good deal upon the observer.

By far the better mode of determination is to compare light curves by superposition. By this method the period depends, not upon two or three isolated observations, but upon every observation made.

It was by this method, by comparing the curve (fig. 1) during March, April, May with that during June, July, August, that the period of *T Centauri* (91·2 days) given in this paper was arrived at.

*Lovedale:*
*January* 1896.

## *Observations of the Variable Star R Carinæ from* 1890 *December to* 1895 *August.* By John Tebbutt.

In volumes xliv., xlvi., and li. of the Society's *Monthly Notices* comparisons of *R Carinæ* were published by me extending from 1880 May to 1890 June. Since the latter year I have been unable to keep up continuous observations of this interesting variable; still, scattered as the comparisons are, they may in combination with others—notably those made by Mr. A. W. Roberts, of South Africa—serve to throw light on its variations since 1890. I therefore enclose my results from 1890 December to August of the current year. While the variable was visible to the naked eye comparison stars were taken from the *Uranometria Argentina.* When the variable was telescopic the list of comparison stars employed was that given in *Monthly Notices*, vol. xliv. p. 17. It will be seen that the comparisons in 1891, 1892, 1894, and 1895 are sufficiently frequent to enable us to determine pretty accurately the maxima for those years. It also appears from a comparison of the observations made at Cordoba in 1871 with those made at Windsor in 1895 that the mean period of the star's variations from maximum to maximum is about 311 days, or about a day less than that which I deduced from observations down to 1886. I may here remark that there is a misprint on page 16 of the forty-fourth volume of the *Notices*, which I believe has not yet been corrected. The concluded magnitude opposite to 1882 December 12 should be 8·6 instead of 9·8.